



Marshall Space Flight Center

Safety and Mission Assurance Directorate FY06 Annual Operating Agreement

September 1, 2005



Explore. Discover. Understand.

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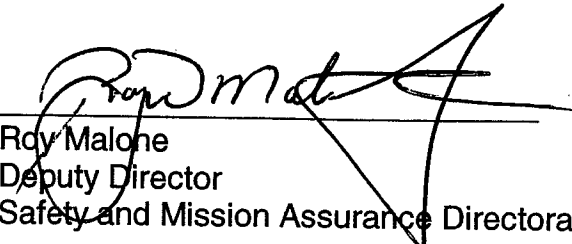
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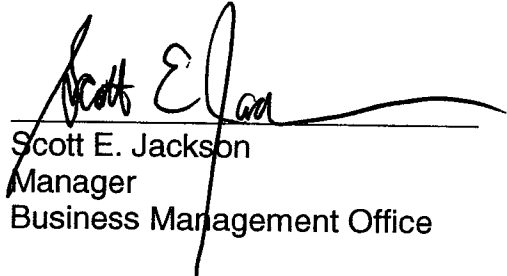
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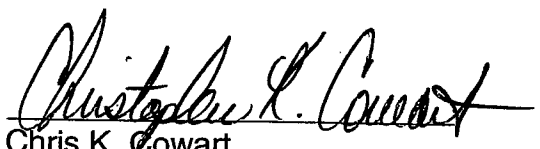
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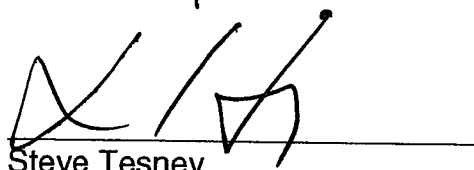
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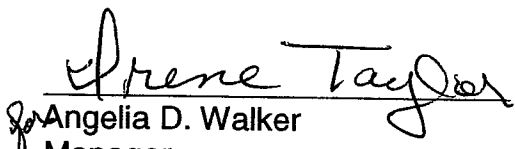
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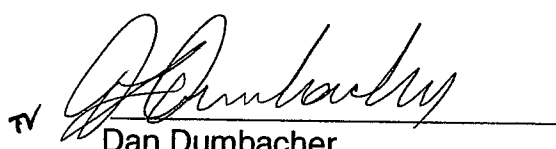
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1. Executive Summary

The Marshall Space Flight Center (MSFC) Safety and Mission Assurance Directorate (S&MA) is comprised of two offices and five departments. The MSFC S&MA Directorate is structured to provide optimal support for the MSFC organizations through matrix support to programs, projects institutions and independent assessments. The Directorate, along with the offices and departments are delegated the responsibilities to meet the mission, goal and objectives detailed in this Annual Operating Agreement (AOA). The MSFC S&MA Strategic Plan guides the evolution of increasingly effective management systems designed to integrate seamlessly with those of our customers, while providing value added services to support mission and project success.

This AOA provides detailed information on planned tasks and goals for FY06 and performance results of FY05 tasks and goals. The AOA provides linkage between S&MA goals and objectives, Center and NASA's goals and objectives along with our long-term goals for FY06. One element of the AOA is to provide FY05 performance summaries. Since, this data is not available in a timeframe that supports the AOA submittal deadline of September 1, MSFC FY05 data is limited to the first three quarters of FY05.

2. Introduction

2.1 AOA Purpose

The MSFC S&MA has produced an AOA for fiscal year 2006 in accordance with National Aeronautics and Space Administration (NASA) Policy for Safety and Mission Success (NPD 8700.1) as linked to the NASA Strategic Management Process. During the process of developing the AOA, the MSFC S&MA Directorate gave careful consideration to the NASA Strategic Plan, the MSFC Implementation Plan, and the MSFC S&MA Strategic Plan.

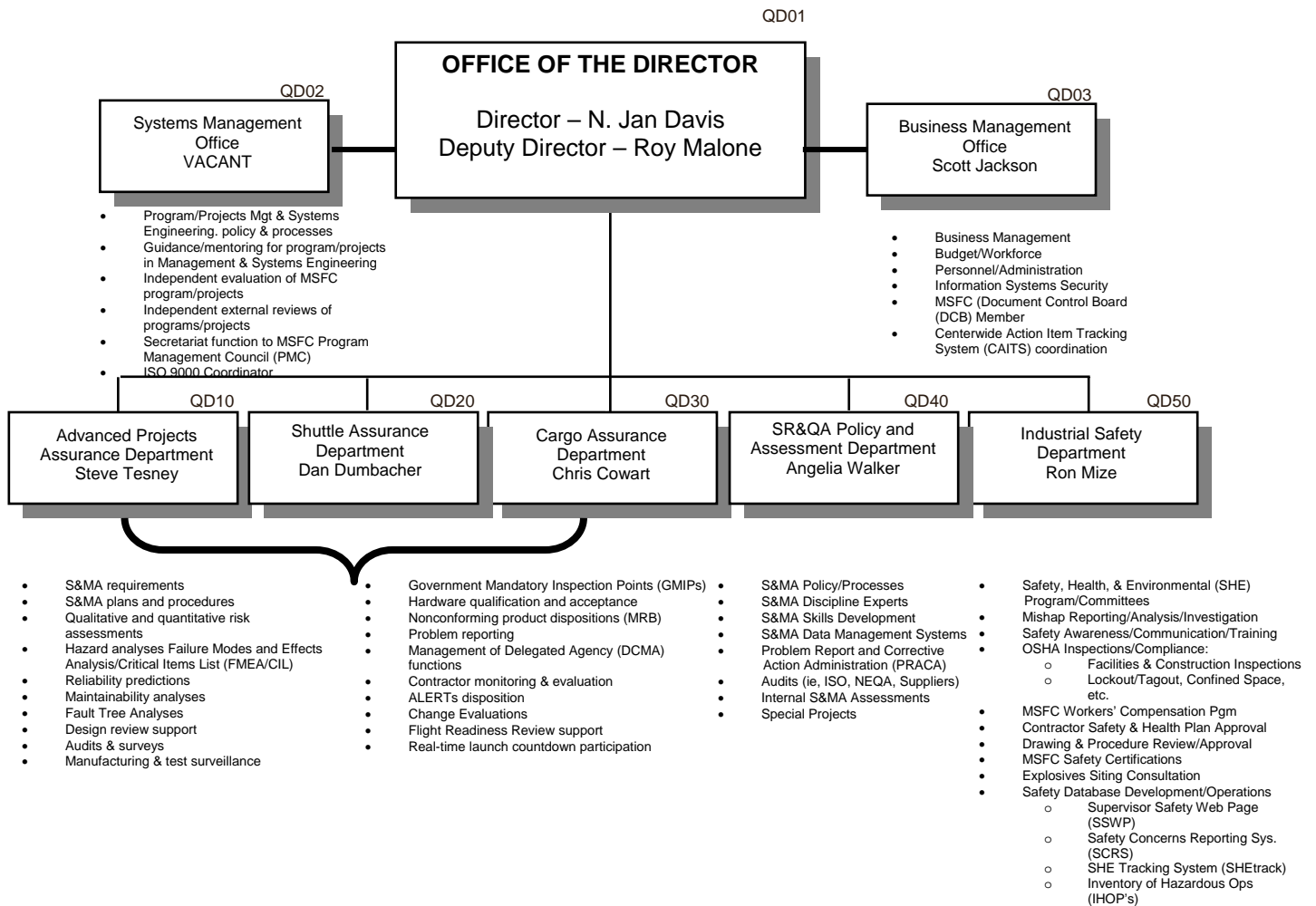
This AOA is intended to serve as a management tool to document the activities that MSFC S&MA plans to accomplish during FY06, and summarizes the estimated human resources necessary to perform them. The S&MA vision, charter, management goals and principles for achieving and measuring the safety and quality initiatives and metrics for FY06 are presented in this document.

For each MSFC S&MA Office and Department, there are tables that identify FY05 Management Tasks/Products, Goals and Performance and FY06 Management Tasks/Products and Goals planned. These tables are a representation of accomplishments for FY05 and upcoming task and goals for FY06. Detailed information on each office and department is included in section 3.4 of this document.

A resource matrix is included which establishes, at the Center level, the resource allocations necessary to meet institutional, program, and project requirements. At MSFC, the Centerwide Resources Planning System (CRPS), our Collaborative Work Commitment (CWC) Process, provides the tools for the MSFC S&MA organization to negotiate with its customers regarding workforce requirements and serves to define

their expectations of the services that will be provided. Agreement between the Program/Project Managers and the MSFC S&MA Directorate provide the basis for tasks to be performed.

2.2 MSFC S&MA Organization Chart



2.3 Planning Assumptions

Workforce and budget requirements provided are based on Agency Program Operating Plan (POP) guidance. The Exploration Initiative tasks are unknown at the present time. These requirements are for the most part over guidelines until Congressional approval is obtained and funding made available. Therefore, we do not consider the over guidelines an issue at this time. Adjustments to personnel cost, Center General and Administrative (G&A), Corporate (Office of Safety and Mission Assurance (OSMA), Office of Chief Engineer (OCE)) and the service pools to accommodate POP process changes and uncovered capacity are anticipated over the next couple of months. The data presented in this AOA for workforce and budgets are our best estimates at the present time. We will develop workforce and funding plans at a more detailed level as the Agency processes mature.

3. MSFC S&MA Mission, Functions, S&MA Process Descriptions

3.1 MSFC S&MA Vision

Success in research and exploration for NASA through Safety and Mission Assurance excellence.

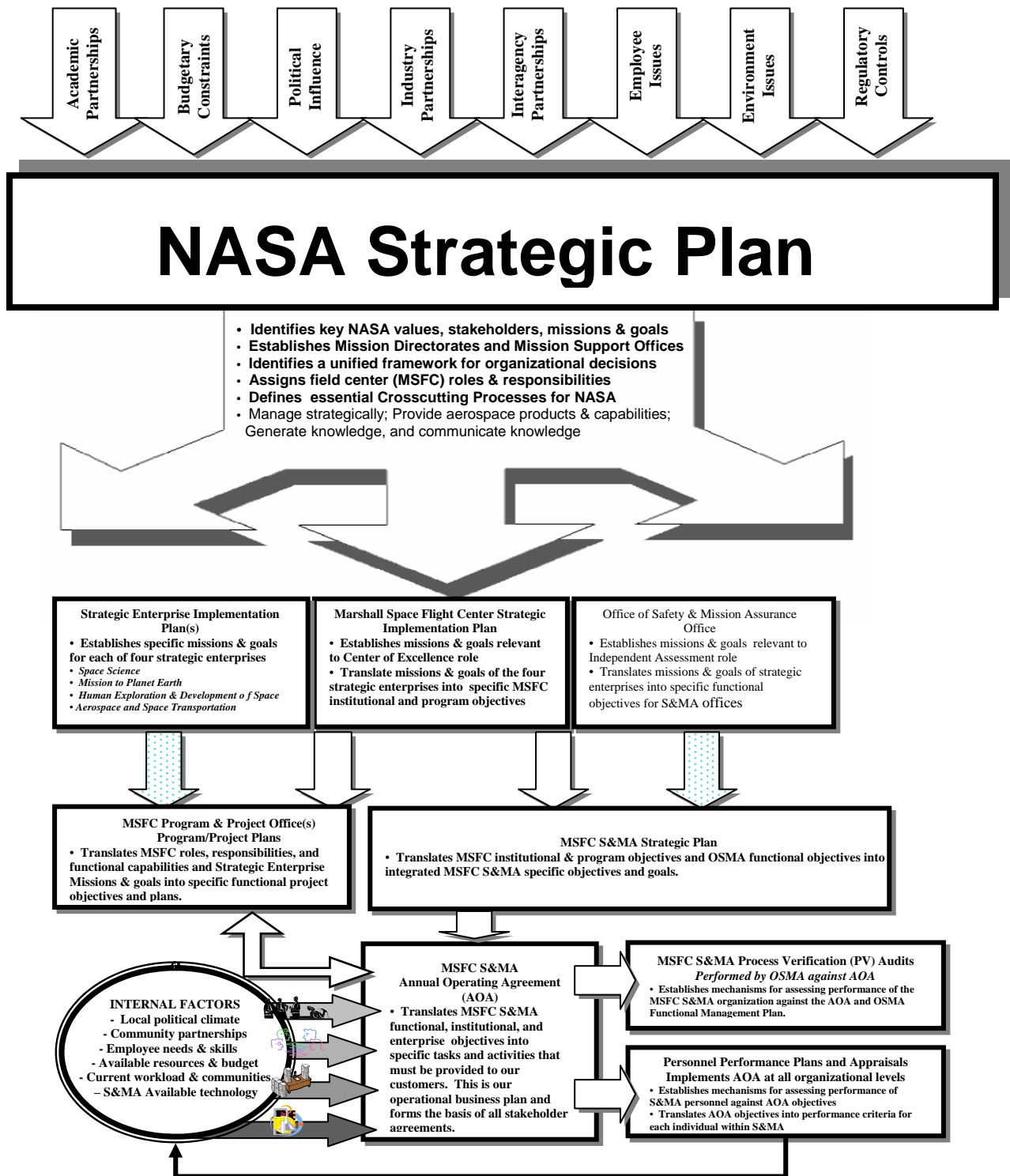
3.2 MSFC S&MA Charter

The S&MA plans, establishes, implements, and directs all Safety and Mission Assurance programs for MSFC in-house and contracted activities to ensure compliance with program/projects requirements and controls; provides support and independent evaluations of projects and programs for compliance with and implementation of NPG 7120.5, "NASA Program and Project Management Processes and Requirements." S&MA provides continuous review and evaluation of program/project activities at all levels throughout the Center. S&MA provides associated contractors for Center Safety and Mission Assurance and systems engineering functions related to space systems. S&MA institutional program/projects include risk management, requirements development and flow-down, and program verification; provides leadership, consultation services, and technical expertise on systems management; develops and implements innovative systems and methodologies; establishes policy requirements; assures the development and implementation of plans for safety, quality, reliability, and maintainability, and performs related analyses for MSFC-managed projects/programs.

3.3 MSFC Strategic Linkage supporting NASA, Mission Directorate and Program Goals

The linkage between MSFC S&MA AOA and S&MA related strategic and Implementation plans and policies at the Center are set forth in Figure 3.3.

Figure 3.3



3.4 MSFC S&MA Functional Disciplines, Goals and Performance

3.4.1 S&MA Front Office Mission and Functions

3.4.1.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
S&MA Directorate (QD01)		
Further Develop a Talented Workforce	<ul style="list-style-type: none"> Completion of hiring goals Baseline assessment of all eligible personnel against 1st three completed Professional Development Roadmaps (PDRMs) Completion of remaining PDRMs 100% participation of eligible employees in PDRM process 	<ul style="list-style-type: none"> Some vacancies still exist, but civil service staffing increased from 102 to 144 100% of eligible employees assessed A total of 6 PDRMs have been approved & released, with the remaining 3 planned before the end of FY05 Actual participation in this voluntary process is less than 100% - for FY06, metric changed to 20% annual increase in number participating
Grow S&MA Discipline Expertise	<ul style="list-style-type: none"> An established authority & policy function between discipline experts and project-related S&MA personnel Discipline experts fully engaged in development of discipline expertise Assessment of optimum discipline expertise levels devoted to major programs/projects 	<ul style="list-style-type: none"> Internal S&MA documents in review cycle – approval & release prior to FY05 end 100% - discipline experts serving as mentors and chairing monthly working group meetings 100% - assessment complete and incorporated into Center's CWC (staffing) process
Develop a Business and Advocacy Process	<ul style="list-style-type: none"> Complete the Business Advocacy Plan S&MA req'ts for new funding through Exploration System Mission Directorate (ESMD) Education process in place on business and resource planning functions for S&MA managers Established customer education process on S&MA value-added capabilities 	<ul style="list-style-type: none"> Business Advocacy Plan completed & awaiting approval – ECD 09/01/05 100% - ESMD tools, training, & communication venues established 100% - process in place and working 100% - process completed, delivery scheduled for FY06
Create a Culture of Empowerment, Trust, Teamwork, and Leadership	<ul style="list-style-type: none"> Establish annual process for employee satisfaction survey Enhance employee awards and recognition program Annual departmental off-sites and directorate leadership training Follow-up on MSFC and Agency-wide culture survey recommendations based on S&MA data 	<ul style="list-style-type: none"> 100% - process established & survey conducted annually 100% - new process identified, including convening a directorate-wide team to assess annual S&MA Appreciation Ceremony All S&MA dept/office off-sites conducted, ~75% managers completed annual leadership training req'ts 100% - S&MA provided membership on Behavior Science technology (BST)-sponsored culture team at MSFC

NOTE: Data in this table above was taken from the MSFC S&MA Strategic Plan (and subsequently reflected in FY05 MSFC AOA), and was not intended for 100% completion by the end of FY05. The "Performance" column shows progress to-date. Estimated completion dates have been established for all of these items, and the MSFC S&MA management team meets bi-weekly to status the progress on these Strategic Plan activities.

3.4.1.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
S&MA Directorate (QD01)	
Early S&MA Involvement in MSFC Programs/Projects	S&MA involvement (funded) no later than Phase A in 100% of MSFC program/projects approved by the MSFC PMC
Adequate S&MA Resources	Minimum 95% S&MA staffing provided to MSFC program/projects (actual vs MSFC CWC database)
Further Develop S&MA Discipline Expertise	Minimum 20% annual increase in number of eligible S&MA workforce participating in Professional Development Roadmap (PDRM) process
S&MA Mobility Assignments	Minimum 5% of workforce participating in mobility assignments annually
Customer Education Process	Customer education process established on S&MA value-added capabilities, and communicated to all MSFC Directorates/Offices by end of FY06
Monthly Supervisory Safety Responsibilities	100% completion of monthly supervisor safety meetings and visits
Customer Satisfaction	Customer satisfaction survey results > 90%
S&MA Employee Satisfaction	S&MA employee satisfaction survey conducted annually, with no average score in "Disagree" category

3.4.2 Systems Management Office

The Systems Management Office (QD02) is located in the S&MA Directorate at MSFC. Its functions, however, support the office of the OCE rather than OSMA. Per previous agreement with OSMA, there will be no further discussion of the MSFC Systems Management Office in this document.

3.4.3 Business Management Office Mission and Functions

The Business Management Office (QD03) performs several distinct functions within the S&MA Department integral to its success. This involves participating in tasks on both the Agency level as well as within MSFC. QD03 administers NASA and MSFC policies and directives governing S&MA Office of Safety and Mission Assurance (OSMA) activities. Additionally, QD03 serves as S&MA interface for implementation of and compliance with policies, procedures that govern requirements and statutes that directly support the MSFC Chief Information Officer (CIO) and Computer Security Official (CSO). Other tasks include performing administrative, personnel, and logistics functions for S&MA. The Administrative personnel assure proper implementation of all Human Resources activities and serve as the focal point for all Directorate actions. Business management (budget/workforce) activities are also coordinated. The Business

Management staff is responsible for the office financial planning which includes, but is not limited to Program Operating Plan submittals, phasing plans, maintenance of the S&MA Milestone Schedule and the Operating Plan.

3.4.3.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
Business Management Office (QD03)		
Business management	Customer survey results of 90% or greater	93% customer satisfaction survey results obtained for Business, Logistics, Property, Personnel and Training management.
Logistics management	Customer survey results of 90% or greater	See above
Property management	Customer survey results of 90% or greater	See above
Personnel management	Customer survey results of 90% or greater	See above
Training management	100% of Individual Development Plans (IDPs) completed/updated each year	100% of IDPs completed in 2005
Information management	<ul style="list-style-type: none"> No lost data or degraded system performance Completion of annual equipment inventory survey within established timeframes 	No lost data or degraded system performance in 2005 Annual inventory completed within timeframes.
ISO 9001	<ul style="list-style-type: none"> Successful completion of National Quality Audits (NQAs) semi-annual audits Acceptable "Health of the Mgt System" concurred in by the Marshall Quality Council 	<ul style="list-style-type: none"> Successfully completed 2 audits last year with recommendation for continued certification Held 2 Marshall Quality Council to review the "Health of the Mtg. System" Nov. 2004 and May 2005
Maintenance of S&MA documentation	Annual review of S&MA documents completed within established timeframe	All S&MA documents reviewed/updated within established timeframe
Customer satisfaction survey	100% of S&MA customers (as identified by QD managers) surveyed at least once per year	Customers surveyed at least once per year was obtained

3.4.3.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
Business Management Office (QD03)	
Submit and manage budget	Submit fully coordinated, on-time budgets for all Safety and Mission Assurance Directorate sources
Process Human Resources (HR) actions	<ul style="list-style-type: none"> Process personnel actions timely manner, and ensure Federal Payroll Personnel System (FPPS) actions and position descriptions are correct and current Ensure that each office/department has a sufficient workforce, help fill vacancies Ensure all performance appraisals/plans (Job Hazard Analysis (JHAs) and IDPs) completed in a timely manner
Process award & training requests	<ul style="list-style-type: none"> Manage awards and training budgets, and keep

	supervisors informed of awards types that are available <ul style="list-style-type: none"> • Process awards and post to the S&MA and center awards • Ensure training requests are processed in a timely manner • Schedule area access training for employees for S&MA
Annual NASA Safety Training Center (NSTC) needs assessment for MSFC	Ensure the NSTC training assessments request are received from MSFC organizations and submitted to Headquarters in a timely manner
Provide Quarterly/Annual Customer Satisfaction Survey	Customer satisfaction survey results > 90%
Information Technology (IT) Security	Ensure 100% completion in safety training (IT Security)
IT Security (Administratively Controlled Information (ACI))	Ensure 100% completion in safety training (Administratively Controlled Information (ACI))

3.4.4 Advanced Projects Assurance Department Mission and Functions

The Advance Projects Assurance Department (QD10) supports the development and implementation of advanced space transportation systems as part of the Vision for Space Exploration. The Department interfaces with both Programs/Projects managed at Marshall Space Flight Center and with select Programs led out of other NASA Centers and NASA Headquarters. The Department normally is assigned to support development of new space vehicle systems, technology demonstrators, space transportation systems and propulsion systems in support of the Exploration Systems Mission Directorate. The Department is involved with the Projects/Programs from the conceptual phase through development, testing, and integration. Department is also involved in flight operations of some technology demonstration systems. The Department provides technical support to the Programs/Projects in all areas of Safety and Mission Assurance, including reliability and maintainability engineering, system safety engineering, quality assurance and engineering, risk management, software assurance and supportability engineering. This support includes technical guidance, and analyses to help ensure mission success and safety. In addition, the Department performs surveillance and inspection of space transportation systems, in-house Government and contracted design, manufacturing, and testing activities which take place in the propulsion testing facilities and specific research laboratories at MSFC to ensure compliance with program/project requirements and controls that affect product quality and personnel safety.

3.4.4.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
Advanced Projects Assurance (QD10)		
<u>Project Assurance Function:</u> Coordination and integration of all MSFC S&MA activities for Office of Exploration Systems (OExS) and Space Transportation Directorate (STD) programs/S&MA Point of Contact (POC) for Space Transportation Program/Project Office (STPPO) and Space Systems Program/Project Office (SSPPO) programs; coordination of S&MA disciplines across all programs and projects; overall assessment of programs and projects; maintain communications at Agency, Center, Program, and Project levels; technical guidance to contractor, Defense Contract Management Agency (DCMA), and MSFC personnel; identification and implementation of S&MA requirements; lead/chair S&MA portion of milestone reviews; evaluate Engineering Change Proposal (ECPs), waivers, deviations, and ALERTs; Risk management consultation; assessment of contractor developed S&MA Plans; International Organization of Standardization (ISO) procedure facilitation and reviews; report program status at Agency, Center, program, and Project levels and at milestone reviews; serve on Preboards and Boards; action item responses; contractor and mission services performance evaluations; identification and coordination of S&MA resources	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
<u>System Safety Engineering Function:</u> Identify flight and ground safety requirements for STPPO and SSPPO programs/ Inputs to Statement of Works (SOWs), Detailed Requirement Documents (DRDs), Specifications, Plans, and Procedures	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Develop safety assessments and review and approve contractor-prepared Hazard Analyses and Safety Review Data Packages/ Evaluation and approval of contractor-developed Safety Plans, Safety Compliance Data package (SCDPs), and Fault Tree Analyses; Development of Hazard Analysis and Fault Tree Analysis for MSFC in-house Projects	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%

Design Review participation/ Milestone Review Safety Review Item Discrepancy (RIDs); Response to Milestone Review RIDs and comments to Safety deliverables	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Failure Investigation/Problem Report and Corrective action (PRACA) support	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
<u>System Safety Engineering Function, cont'd:</u> Provide guidance and implementation of software safety principles and practices/Hazard Analyses methodology; Evaluation and approval of contractor-developed Safety Plans, SCDPs, and Fault Tree Analyses; Development of Hazard Analysis and Fault Tree Analysis for MSFC in-house Projects	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
<u>Reliability Engineering Function:</u> Acute Launch Emergency Reliability Tip (ALERT) Program/ALERTs; Agency Action Notices; Problem Advisories	0% ALERTs open in monthly report which have adequate contractor rationale, but not reviewed by S&MA	Achieved 0% ALERTs open in monthly reports, averaged over FY05
Quantitative and Qualitative Reliability/Maintainability and Risk Assessments/STPPO and SSPPO Risk Assessments; Reliability Assessments; Probabilistic Risk Assessments; Failure Modes and Effects Analyses; Risk Assessment of Advanced Projects; Reliability Predictions; Maintainability Analyses; Fault Tree Analyses; Trade Studies	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
<u>Reliability Engineering Function, cont'd:</u> Perform an integrated system safety and reliability/maintainability risk analysis for new projects/Integrated Risk Analyses and Risk Management tools and products	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
<u>Quality Engineering Function:</u> Identify Quality requirements for STPPO and SSPPO programs/ Inputs to SOWs, Design Reviews (DR's,) Specifications, Plans, and Procedures	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Assess technical documentation (drawings, procurement requests, procedures, Certificate of Compliance (COCs), ECPs, etc.)/ Drawing Reviews; Review and approval of contractor-developed Quality Plans; Procurement QA requirements; Receiving Inspection requirements and instructions; Mandatory Inspection Points (MIPs); Nonconformance Report (NCR) evaluations; Procedure review and approvals	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%

Quality Engineering Function, cont'd: Design Review participation/ Milestone Review Quality RIDs; Response to Milestone Review RIDs and comments to Quality deliverables	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Failure investigation/NCRs; PRACA support; Material Review Board (MRB) support	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Quality Delegations/ Letters of Delegation to Defense Contract Management Command (DCMC) and other NASA Centers	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Audits and Surveys/ Audit and survey findings, corrective actions, and closures	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Assess qualification and verification/ Test results review; Design certification Review; Acceptance Data Package review and approval	Provide value added S&MA products as reflected in QD10 customer satisfaction survey results of 90% or higher	Achieved QD10 customer satisfaction rating of 100%
Quality Assurance Function: Provide Quality Assurance (QA) coverage of development, functional, acceptance, and qualification testing for flight and associated hardware/Completion of as-run test procedures; Generation of Discrepancy Records	No errors by QD10 personnel in the recording of data, procedure deviations, Test Discrepancy Reports and Discrepancy Reports associated with As-Run Test Procedures	Achieved zero errors by QD10 personnel in the recording of data, procedure deviations, Test Discrepancy Reports and Discrepancy Reports associated with As- Run Test Procedures
Risk Management Function: Identification, evaluation, and tracking of S&MA risk items/ Inputs to Program Plans and Risk Management Plans; S&MA Risk Items List	All STPPO and SSPPO projects will have a risk management plan	100% of STPPO and SSPPO projects have risk management plans
Participate in STPPO and SSPPO Risk Management Board activities/ Evaluations of Program identified risks and mitigation plans	All STPPO and SSPPO projects will have a risk management plan	100% of STPPO and SSPPO projects have risk management plans

3.4.4.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
Advanced Projects Assurance Department (QD10)	
Early S&MA involvement in MSFC program/projects	S&MA involvement beginning in Phase A in 100% of MSFC program/projects approved by PMC
Adequate S&MA resources	100% S&MA staffing to program/projects (per CWC)
Customer satisfaction	Customer satisfaction survey results >90%
Delivery of S&MA products	100% on-time delivery of S&MA products supporting program/projects milestones
Quality escapes related to test facility modifications or test article installation	No quality escapes resulting in facility or test article discrepancies, test anomalies, or damage

3.4.5 Shuttle Assurance Department Mission and Functions

The Shuttle Assurance Department (QD20) assures implementation of S&MA requirements on Space Shuttle main propulsion projects which includes support of External Tank (ET), Reusable Solid Rocket Motor (RSRM), Solid Rocket Booster (SRB) and Space Shuttle Main Engine (SSME) for the Space Shuttle Program. They assess Space Shuttle program-contracted design, manufacturing, testing and operations to assure compliance with applicable requirements and satisfactory disposition of any requirements departures. Independent Assessments are done for Space Shuttle flight readiness and results are presented to Space Shuttle Program S&MA and NASA Headquarters Office of Safety and Mission Assurance. The Shuttle Assurance Department also provides support to the Space Shuttle Propulsion Office and the Program Safety and Mission Assurance risk management processes.

3.4.5.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
Shuttle Assurance Department (QD20)		
Reliability engineering	100% of ALERTS closed with adequate contractor rationale	100% of ALERTS were closed with adequate contractor rationale to support Space Transportation Systems (STS)-114. All Certificate of Flight Readiness items were closed to support STS-114.
DCMA activities	All Government Management Inspection Point (GMIPs) performed and all Process Surveillance Audit findings closed prior to launch	All GMIPs performed and all Process Surveillance Audit findings were closed to support STS-114. All Certificate of Flight Readiness items were closed to support STS-114.
Resident Management Office (RMO) activities	100% of MRBs closed prior to launch	100% of MRBs were closed to support STS-114. All Certificate of Flight Readiness items were closed to support STS-114.
Safety Reliability and Quality Assurance (SR&QA) evaluations	All Hazard Analysis (HAs) and FMEA/CIL are maintained up-to-date, and all PRACA items dispositioned prior to launch	All HAs and FMEA/CIL are maintained up-to-date, and all PRACA items were appropriately dispositioned to support STS-114. All Certificate of Flight Readiness items are closed to support STS-114.
Project office support	Customer satisfaction feedback rating of 90% or greater	Customer satisfaction rating is greater than 90%.
OSMA program support	Any area of deficiency identified in the customer feedback is discussed between MSFC S&MA presenter and his/her supervisor.	None identified. Program support is satisfactory.
Return to flight	100%: <ul style="list-style-type: none"> Review of MSFC Accepted Risk Hazard Reports Review and approval of any affected Hazard Reports Review of Program requirement Control Board (PRCB)-required 	All Certificate of Flight Readiness (CoFR) items including Hazard Reports, Accepted Risks items, and CILs were reviewed and processed through appropriate boards. All Certificate of Flight Readiness items were closed to support STS-114.

	<ul style="list-style-type: none"> Critical Items List (CILs) Review and approval of any affected CIL's 	
Pyrotechnic Systems (S&MA)	Zero in-flight failures of Criticality 1 pyrotechnic devices, and zero in-flight failures of both Criticality 1R pyro devices in the same pyro system	None for STS-114

3.4.5.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
Shuttle Assurance Department (QD20)	
Program/Project Safety and Mission Assurance	Complete Certificate of Flight Readiness items prior to flight.
Pre-flight Assessment	100% Pre-Flight Assessments conducted for all Shuttle Propulsion Elements prior to each mission
Customer Support	Customer satisfaction feedback rating of 90% or greater
Project Deliverables	100% on-time delivery of QD20 products supporting program/project milestones
Resource Management	Minimum 95% staffing to program/project (per CWC)

3.4.6 Cargo Assurance Department Mission and Functions

The Cargo Assurance Department (QD30) supports a wide range of manned and un-manned spaceflight programs and projects managed by the Marshall Space Flight Center as well as supporting selected projects managed at other NASA Centers. The Department is typically assigned to provide S&MA support for all flight projects and associated ground support equipment not associated with the development or maturation of new technologies, new space vehicles or associated systems, space transportation systems or propulsion systems. Department involvement normally begins at conceptual design and continues through development, testing, integration and flight operations of the space flight hardware. Primary roles and responsibilities of the Cargo Assurance Department include conducting system safety analyses that include hazard analyses to ensure the safety of flight and ground personnel and assets; performing reliability and maintainability analyses to assure flight systems are reliable and easily maintained; and providing quality assurance services to validate that processes are stable and that hardware meets design specifications. In addition, the Department is responsible for management and maintenance of program/project quality assurance records; equipment calibration; and issuance and control of quality and safety stamps.

3.4.6.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
Cargo Assurance Department (QD30)		
Quality Assurance – Calibration	95% of S&MA Category I Inspection, Measuring and test Equipment (IMTE) submitted for calibration prior to recalibration due	99% of calibrated equipment maintained by S&MA was submitted to the Calibration Laboratory for recalibration prior to its due date.

	date	
Quality Assurance – Quality Records	<ul style="list-style-type: none"> • Provide 90% of requested as-built reports within the agreed-to schedule • Less than 3% errors in maintenance of stamp database 	<ul style="list-style-type: none"> • 92% of all requested as-built reports were provided to the requesting organization within the negotiated timeframe. • The S&MA stamp database was maintained within a 99% accuracy level (i.e., 1% error rate).
Quality Assurance – Test Support	Less than 10% errors by Quality Inspection personnel in the recording of data, procedure deviations, Test Discrepancy Reports and Discrepancy Reports associated with As-Run Test Procedures	Audits conducted of Quality Inspection records resulted in an observed error rate of 9%.
Quality Assurance - Inspection	Less than 10% errors from special process audits of inspection services documentation	Special process audits conducted of inspection services documentation found an error rate of 9%.
Project Assurance	<ul style="list-style-type: none"> • 100% of MSFC programs/projects have S&MA Project Assurance Lead assigned prior to Authority To Proceed • 100% of all assigned programs/project have sufficient Civil Servants (CS) and support contractor resources 	<ul style="list-style-type: none"> • 100% of supported MSFC programs/projects were assigned an S&MA Project Lead prior to Authority to Proceed (ATP). • 100% of assigned programs/projects have sufficient S&MA resources.
System Safety Engineering	<ul style="list-style-type: none"> • 100% of applicable programs/projects have approved System Safety Plan prior to Preliminary design review. • 100% of applicable hazard analyses documentation is maintained up-to-date 	<ul style="list-style-type: none"> • 100% of programs/projects had approved System Safety Plans prior to Preliminary Design review (PDR). • 100% of applicable hazard analysis documentation was maintained up-to-date.
Reliability Engineering	<ul style="list-style-type: none"> • 100% of applicable programs/projects have approved Reliability Plan prior to Preliminary Design Review • 100% of applicable reliability documentation is maintained up-to-date 	<ul style="list-style-type: none"> • 100% of programs/projects had approved Reliability Plans prior to PDR. • 100% of applicable reliability documentation was maintained up-to-date.
Maintainability Engineering	<ul style="list-style-type: none"> • 100% of applicable programs/projects have approved Maintainability Plan prior to Preliminary Design Review • 100% of applicable maintainability documentation is maintained up-to-date 	<ul style="list-style-type: none"> • 100% of programs/projects had approved Maintainability Plans prior to PDR. • 100% of applicable maintainability documentation was maintained up-to-date.
Quality Engineering	<ul style="list-style-type: none"> • 100% of applicable programs/projects have approved Quality Plan prior to Preliminary Design Review • 100% of applicable QA documentation is maintained up-to-date 	<ul style="list-style-type: none"> • 100% of programs/projects had approved Quality Plans prior to PDR. • 100% of applicable QA documentation was maintained up-to-date.
Risk Management	<ul style="list-style-type: none"> • 100% of applicable 	<ul style="list-style-type: none"> • 100% of programs/projects had

	Programs/Projects with approved Risk Management Plan prior to Preliminary Design Review • 100% of applicable risk management documentation is maintained up-to-date	approved Risk Management Plans prior to PDR. 100% of applicable risk management documentation was maintained up-to-date.
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3.4.6.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
Cargo Assurance Department (QD30)	
Project planning/requirements assurance	S&MA planning and requirements documents accepted and in place prior to first milestone review
Strategic project influence	Involvement beginning no later than Phase A in 100% of applicable MSFC programs/projects approved by PMC
Project S&MA deliverables	100% on-time delivery of critical S&MA deliverables for QD30 programs/projects
Effective project support	Minimum 95% staffing provided to programs/projects (per CWC)
Customer satisfaction	Customer satisfaction survey results greater than 90%
S&MA advocacy and customer relations	Conduct, at a minimum, semi-annual face-to-face visits with key QD30 customers to address issues, concerns and S&MA capabilities

3.4.7 Safety Reliability and Quality Assurance Policy and Assessment Department Mission and Functions

The Safety, Reliability & Quality Assurance Policy and Assessment Department (QD40) provide expertise in core S&MA disciplines to include System Safety, Reliability & Maintainability, Quality, Software Assurance and Risk Management. QD40 develops and implements policies, tools and techniques for these core disciplines to facilitate their implementation across the Center. The Department manages the MSFC audit programs (internal and external), supplier outreach and process control program, and its Continuous Risk Management instruction and facilitation process. It also administers the Problem Report and Corrective Action (PRACA) programs, Government Industry Data Exchange Program (GIDEP), NASA ALERT Program, and NASA Safety Reporting Systems (NSRS) Program. The Department performs Probabilistic Risk Assessments (PRA), Independent Assessments, program/project support, and requirements compliance audits in support of NASA Office of Safety and Mission Assurance, MSFC Program/Projects Offices and the NASA Engineering and Safety Center. It develops and coordinates the release of Safety, Reliability & Quality Assurance Professional Development Road Maps (PDRMs) and facilitates the development of skills in the S&MA disciplines.

3.4.7.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
SR&QA Policy & Assessment Department (QD40)		
System Safety Engineering	<ul style="list-style-type: none"> 25% of System Safety Engineering team members are baselined against the System Safety Engineering Professional Development Roadmap (PDRM) by the end of FY05 50% participation in System Safety Engineering training classes 50% participation in monthly System Safety Engineering team meetings 75% participation in the system safety mentoring process by the end of FY05 	<ul style="list-style-type: none"> Goal exceeded. 100% baselined System Safety courses taught throughout FY05; Goal Met. Participation in monthly PDRM meeting is about 45%. Current participation in the systems safety mentoring is about 45%
Continuous Risk Management (CRM)	<ul style="list-style-type: none"> At least 200 MSFC civil service/contractor personnel receive CRM instruction in FY05 At least 10 MSFC programs/projects receive CRM facilitation in FY05 20% of MSFC programs/projects assessed against CRM Agency standards in FY05 	<ul style="list-style-type: none"> Goal met. 204 MSFC Civil Service & contractor personnel received CRM instruction. Goal exceeded. Provided CRM facilitation to 12 MSFC projects as of July 05. CRM assessment 10% of MSFC projects. Implementation of process delayed due to delay in process approval.
Internal Audits	100% audit of all MSFC internal organizations on an annual basis	Goal Met.
Quality engineering	<ul style="list-style-type: none"> 25% of Quality Engineering team members are baselined against the Quality Engineering Professional Development Roadmap (PDRM) by the end of FY05 50% participation in Quality Engineering training classes 50% participation in monthly Quality Engineering team meetings 75% participation in the quality engineering mentoring process by the end of FY05 	<ul style="list-style-type: none"> Goal exceeded. 100% baselined. Quality Engineering courses taught: Goal Met. Participation in monthly PDRM meeting is about 45 %. Current participation in the quality engineering mentoring is about 40%
Reliability	<ul style="list-style-type: none"> 95% of contractual/PRACA processing reports submitted on time 100% of MSFC shuttle element trend reports released by 15th of every month 	<ul style="list-style-type: none"> Met the established goals. All reports were submitted and released within the required time. Met the established goals. All reports were released within the required time
Reliability/ALERTS	<ul style="list-style-type: none"> No greater than 200 delinquent ALERT responses each month ALERTS released within required timeframe 95% of the time 	<ul style="list-style-type: none"> Met the established goals. Number of delinquent ALERT responses are significantly less than 200 Met the established goals.
Reliability & maintainability engineering	<ul style="list-style-type: none"> 25% of R&M Engineering team members are baselined against the 	<ul style="list-style-type: none"> Goal exceeded. 100% baselined.

	<p>R&M Engineering Professional Development Roadmap (PDRM) by the end of FY05</p> <ul style="list-style-type: none"> • 50% participation in R&M Engineering training classes • 50% participation in monthly R&M Engineering team meetings • 75% participation in the R&M mentoring process by the end of FY05 	<ul style="list-style-type: none"> • R&M Engineering courses taught: Goal Met. • Exceeded goal. Participation in monthly PDRM meeting is about 60 % • Exceeded goal. Current participation in the reliability engineering mentoring is about 88%
Human Space Flight Systems Independent Assessment (IA)	<ul style="list-style-type: none"> • Final assessment reports are completed within 2-3 weeks after assessment completion date • Engineering Information Reports are completed within 2 days after evaluation of event 	<ul style="list-style-type: none"> • Independent Assessment (IA) Final Reports completed at least 4 weeks subsequent to assessment completion . • Engineering Information Reports (EIR) completed within 3-5 days after evaluation of events
Software Assurance	At least 35% of NASA Software Assurance Compliance Plan requirements implemented during FY05	Goal met; accomplished over one third of tasks identified in the Software Assurance (SA) Compliance Plan. Also, the Data Requirements Documents (DRDs) for software assurance products have been updated to reflect NASA-STD-8739.8.

3.4.7.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
SR&QA Policy & Assessment Department (QD40)	
Reliability – PRACA and Trend Reports	Minimum of 95% of program/projects Problem Reporting and Corrective Action (PRACA) reports submitted on time
Reliability/ALERTS	ALERTS released within required timeframe 95% of the time
Software Assurance - Implementing NASA-STD-8739.8	Minimum of 35% annually of NASA Software Assurance Compliance Plan requirements implemented until FY08
Internal Audits	Annual audits of 100% of MSFC Offices & Directorates to AS9100 Management System
Internal Audits	Annual 100% audit of Center Environment Management System (EMS) system
Independent Assessments	IA coverage of 10% of MSFC PMC program/projects annually
Continuous Risk Management (CRM) Instructions and facilitation - CRM Course Instructions/Workshops	CRM instruction/facilitation of 25% MSFC PMC-approved projects annually
CRM Implementation Assessments - Programs/Projects CRM Capability Maturity Level Reporting	Annual assessments of minimum 20% of MSFC program/projects CRM implementation

3.4.8 Industrial Safety Department Mission and Functions

The Industrial Safety Department provides institutional and facility safety expertise in support of Marshall Space Flight Center (MSFC). Major effort is centered on safety of employees/facility/operations and compliance with Occupational Safety and Health Administration's (OSHA) requirements.

3.4.8.1 FY 2005 Management Goals and Performance

Tasks/Products	Goals	Performance
Industrial Safety Department (QD50)		
General safety support for customers	Customer survey results of 90% or higher	Feedback survey links are provided on all product submittal messages. Overall customer survey score for the Industrial Safety Department for FY05 is 96%
Design reviews	Customer survey results of 90% or higher	Industrial Safety reviews all design drawings. A feedback survey link is provided on comment submittal messages. Overall customer survey score for the Industrial Safety Department for FY05 is 96%
Facility inspections	<ul style="list-style-type: none"> Maintain Safety Office Findings Ratio > 4 Complete 100% of annual OSHA facility inspections, including at least 2 inspections/year for facilities housing hazardous operations 	<ul style="list-style-type: none"> The safety office identified over 2700 findings in FY05. The total number of incidents including first aid is 60. This is a ratio of 45. All facilities were inspected by a team including safety professionals, Facilities Department Representatives, and building manager, during the FY05 period. Hazardous operations areas were inspected twice.
Fire protection safety	100 percent of the annual fire drills are conducted	Fire drills were conducted at all buildings with 10 or more occupants. Re-drills were conducted if occupants failed to exit satisfactorily.
Hazard analyses	<ul style="list-style-type: none"> IHOPs submittals reviewed by QD50 within 90 days of entry into database Customer survey results of 90% or higher 	<ul style="list-style-type: none"> During the first half of the year about 5% of Inventory of Hazardous Operations (IHOPS) submittals were taking longer than 90 days. For the last 3 months 100% were completed during the required time frame. Overall customer survey score for the Industrial Safety Department for FY05 is 96%
Lifting equipment certification	Certification packages and/or deviations are reviewed and approved/disapproved within 30 days of receipt	MSFC has an active Lifting Subcommittee consisting of a cross-section of crane users. Overhead cranes in older buildings are being refurbished or replaced. There was no critical certification/deviation processed during the period.

Mishap data maintenance/trending	Monthly and annual reports are submitted to meet required deadlines	Monthly and Annual reports were 100% on-time. Metrics and trends were reported monthly to both the Marshall Team Meeting (Center Director Chair) and the MSFC SHE Committee.
Personnel certification processing	Paperwork reviewed and certification issued/disapproved within 30 days of receipt	Over 500 certifications were processed. Average turn around time for certifications was 14 days, none exceeded 30 days.
Safety audits	100% completion of scheduled audits	Safety audits are being performed in conjunction with ISO 9000 audits. Audits met schedule except for Michoud assembly Facility (MAF). Rescheduled for later date due to Return to Flight activities.
Safety awareness	Maintain overall MSFC Team (civil service/contractor) Performance Evaluation Profile (PEP) survey score of 4.0 or greater	MSFC continues to provide a very effective awareness program including a cross Center Awareness Subcommittee. MSFC Team PEP Score was 4.3. Best in Agency.
Safety plan/program review	Review of contractors' self-assessments are completed within 2 weeks of receipt	During early part of period some reviews were exceeding the 2 week goal. Met goal last three months.
Safety program and implementation	Annual review of MSFC safety policy and procedures is completed by established deadlines	100% of annual reviews completed on time. All instructions were updated to meet new Headquarters standards.
Safety training	Maintain MSFC Team (civil service/contractor) PEP survey score of 4.0 or greater on "Training" element	MSFC has an active cross-organization Training Subcommittee. A major accomplishment is a new multi-media Employee training course on SOLAR. PEP Training score was 4.3
Aviation safety	Contract evaluations and inspections are completed by established deadlines	Conducted quarterly contract evaluations and all required NASA and Federal Aviation Administration (FAA) inspections within required deadlines. Also an Inter-Center Aircraft Ops Peer Review was conducted during the period.
Emergency preparedness	<ul style="list-style-type: none"> Maintain MSFC Team (civil service/contractor) PEP survey score of 4.0 or greater on "Emergency Preparedness" element Completion of 100% of required drills 	Emergency Preparedness PEP Score was 4.4. Third party Voluntary Protection Program (VPP) assessment rated emergency preparedness at 94%, highest rating given in any element. One severe weather drill, one table top drill and two post-event critiques were conducted – 100% of required.
Environmental (hazardous chemicals)	Annual update of Chemical Inventory completed by February 25th	The Chemical Inventory was completed by Feb 25th and Tier II Report submitted to local emergency planning commission. Also, MSFC is currently implementing a new chemical tracking system which includes bar-coding of all chemicals on Center.
Facilities configuration	100% of all changes incorporated	The systems drawings for NASA

management	into systems drawings.	mission essential facilities and new buildings are being kept 100% up-to-date. Safety critical systems (electrical, high pressure, etc.) in other buildings are being updated as resources permit. Crafts field verify configuration before performing activities involving potentially hazardous systems.
Safety training for Test Area	Test area access training completed for 100% of personnel requiring access	100% of access personnel trained. Access is controlled by key card gate. Training must be up-to-date to activate key card. Non-trained personnel are escorted.
Integration	Execution of MSFC contractor Excellence Award, George M. Low Award, and Quality and Safety Achievement Reorganization (QASAR) award processes, resulting in at least one nomination annually to NASA HQ	MSFC has three nominations going to NASA HQ.

3.4.8.2 FY 2006 Management Goals

FY06 Tasks/Products	FY06 Goals
Industrial Safety Department (QD50)	
Ensure a safe work environment for MSFC Workers	100% of annual Occupational Safety and Health Administration (OSHA) facility inspections, semi-annual hazardous operations, & construction inspections conducted
Ensure civil service and contractor organizations are complying with safety program requirements.	100% of required safety audits of civil service and prime contractor organizations completed.
Ensure a high level of safety awareness at MSFC	Maintain overall MSFC Team (civil service & contractors) PEP survey score of 4.0 or greater.
Ensure fire safety for MSFC workers	100 percent of the annual fire drills are conducted.
Ensure an effective hazard assessment program for potentially hazardous operations	Inventory of Hazardous Operations (IHOPs) submittals reviewed by QD50 within 90 days of entry into database
Ensure safety of lifting and handling operations	Certification packages and/or deviations are reviewed and approved/disapproved within 30 days of receipt
Maintain and trend mishap data	Monthly and annual reports are submitted to meet required deadlines
Maintain an effective certification program for personnel performing potentially hazardous operations.	Paperwork reviewed and certification issued/disapproved within 30 days of receipt
Ensure an effective safety training program for MSFC workers	Safety training conducted for new employees and temps 100%
Provide safety consultation to managers and employees	QD50 customer satisfaction survey results > 90%
Aviation safety	Contract evaluations and inspections are completed by established deadlines
Emergency preparedness	<ul style="list-style-type: none"> Maintain MSFC Team (civil service/contractor) PEP survey score of 4.0 or greater on "Emergency Preparedness" element Completion of 100% of required drills

Environmental (hazardous chemicals)	Annual update of Chemical Inventory completed by February 25th
Continually improve the Safety Program at MSFC	Minimum 2 new tools/enhancements developed annually

4. MSFC Safety and Institutional Metrics

See Appendix A

5. Customer Feedback

To date for FY05, S&MA has received 21 solicited and 31 unsolicited comments from its customers. All unsolicited comments were positive and complimentary. The Customer Satisfaction rating to date is 94.43%. There are six categories reviewed in the survey which include: 1. Timeliness; 2. Following of Policies/Procedures; 3. Service provided valuable and necessary; 4. Professionalism; 5. Were people competent and well trained; 6. other – allowed for comment not covered in the survey.

6. Critical Deliverables

- Launch Vehicle S&MA Implementation Plan
- Launch Vehicle S&MA requirements
- Safety Assessments
- Reliability Assessments
- Risk Assessments
- Node 2 Flight Safety Verification Tracking Log
- Node 3 Phase III Safety Data Packages (Flight and Ground)
- Node 3 Safety Review Presentation Packages (Flight and Ground)
- Node 3 Safety Verification Tracking Logs (Flight and Ground)
- Node 3/Regen Environment Control and Life Support System (ECLSS) Failure Modes and Effects Analysis (FMEA) Update
- Node 3 PIDS Verification Compliance Notices
- Regenerative ECLSS Water Recovery System WRS and Oxygen Generation System OGS FCA/PCA Data Package
- Regenerative ECLSS Safety Review Presentation Packages (Flight and Ground)
- Regenerative ECLSS Reliability Block Diagrams
- Regenerative ECLSS Crew Time Predictions
- Regenerative ECLSS WRS and OGS Specification Verification Closures
- Regenerative ECLSS WRS and OGS Safety Verification Tracking Logs (Flight and Ground)
- Regenerative ECLSS WRS and OGS Preship Review Data Packages
- Multi-Purpose Logistics Module (MPLM) Flight Safety Data Package for active mission
- S&MA resource estimates for the Collaborative Work Commitments
- CoFR inputs to support Shuttle/International Space Station Stage Operations Readiness review (ISS SORR) and Safety and Mission Assurance Readiness Review (SMARR)
- S&MA/Quality Plans for new projects (e.g., Advanced Life Support)

- Materials Science Research Rack (MSRR) Phase III Integrated Safety Data Packages (Flight and Ground)
- MSRR Final FMEA/CIL
- MSRR Final Limited Life Items List
- MSG Integrated Flight Phase III Safety Data Packages (includes PromISS, PABS, InSpace-2, BXF, SAMS-TSH & SAME)
- Solar-B SMARR presentation package
- New Horizons SMARR presentation package

7. Long term S&MA Goals

- Ensure a safe work environment for the MSFC workforce
- Ensure the safety and mission success of MSFC programs/projects through application of SRM&QA and systems mgmt principles
- Further develop S&MA discipline expertise
- Improve teamwork and management credibility in the S&MA Directorate
- Improve S&MA advocacy and resource forecasting process

8. Current Year and Out-year Resource Plan

See Appendix B

9. Issues and Resource Shortfalls

Business Management Office

There are no shortfalls at this time that we feel cannot be overcome or resolved as the budget process matures. As preliminary Agency and Center realignment decisions are made and reorganization plan are finalized we will adjust our plans to meet requirements.

Advanced Project Assurance Department

- Advanced Project Assurance Department is concerned that we might not be able to acquire a sufficient number of skilled S&MA personnel in a timely manner to support the Vision for Space Exploration (VSE) Launch Vehicle program.
- Advanced Project Assurance Department does not have succession capability for the highly skilled and certified Test Area Quality Assurance personnel. If any of the present personnel should leave due to retirement or other reason, we have no replacements available to provide the existing quality assurance capabilities.

Cargo Assurance Department

- There is a concern with funding of Node 2/3 project support for FY06. The S&MA tasks at MSFC are conducted in support of the ISS Safety & Mission Assurance Program Risk Office at JSC and funded through the S&MA service pool. Although the FY05 tasks and associated resources were negotiated in advance via a Memorandum of Agreement, to date, no funding has been

received to cover civil service manpower expended for these important ISS elements. Differences of opinion in how the S&MA service pool is to be funded are not expected to be resolved prior to proceeding into the new fiscal year, whereupon it is anticipated that FY06 funding will also be inadequate or unavailable.

- Implementation of the independent Technical Authority (iTA) within the cargo/payload community. Documentation including white papers and proposed implementation plans have been developed as well as briefings conducted to address iTA roles, responsibilities and processes. However, implementation within the cargo/payload community has not been realized. Queries concerning specific iTA methods remain unanswered.
- There is an impending and highly visible shift in workload from space science to exploration at MSFC. Space science activities represent a major element of the Cargo Assurance Department's assigned work. As a result, this Department anticipates initiating an internal reorganization or reassignment of personnel within the overall S&MA Directorate.

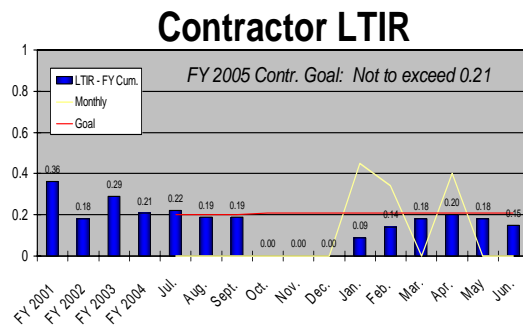
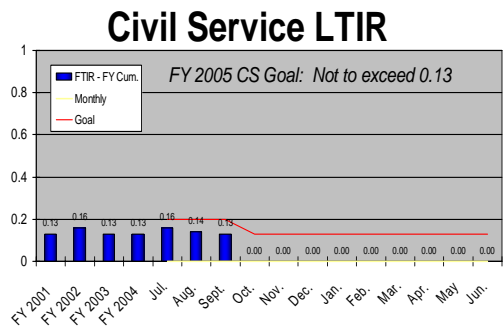
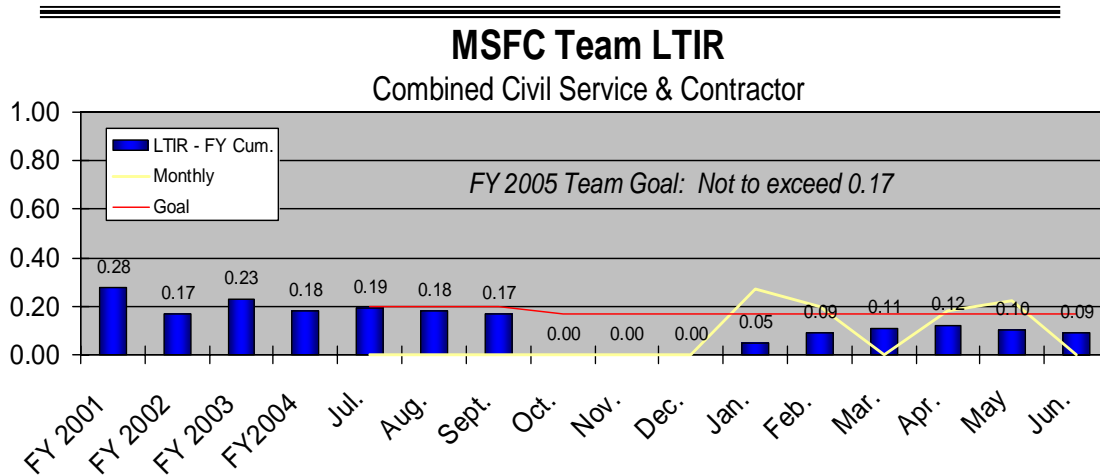
MARSHALL SPACE FLIGHT CENTER

S&MA AOA –FY06

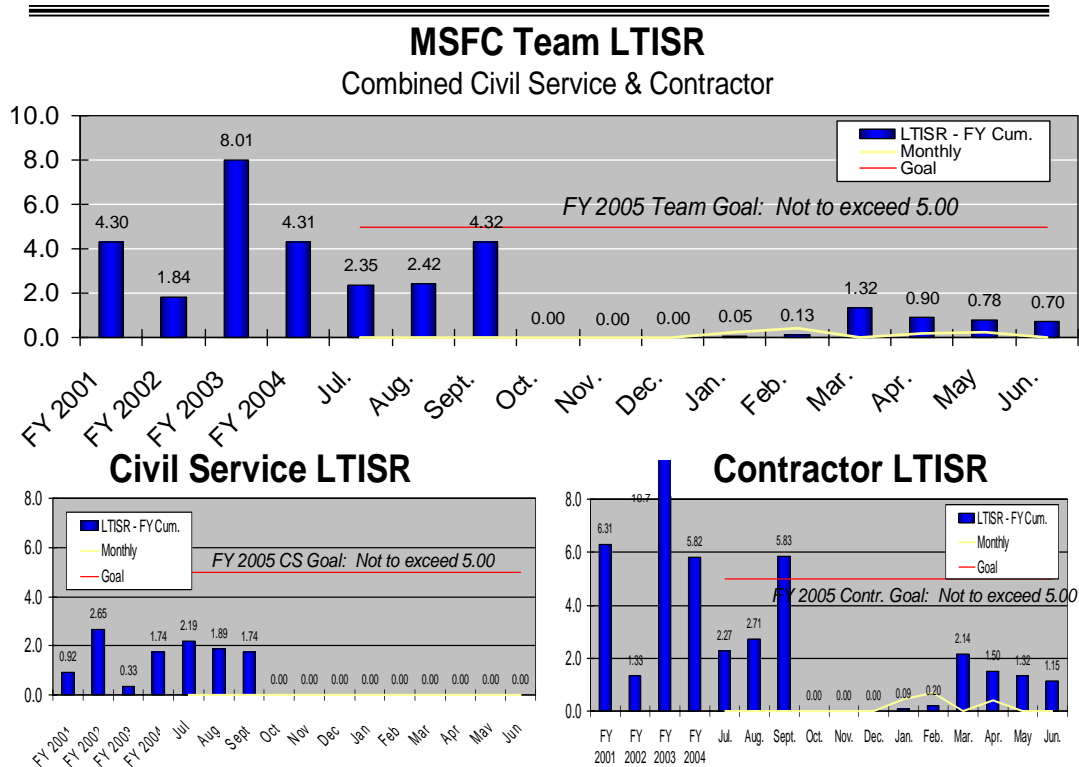
APPENDIX A

SAFETY AND INSTITUTIONAL/OSHA METRICS

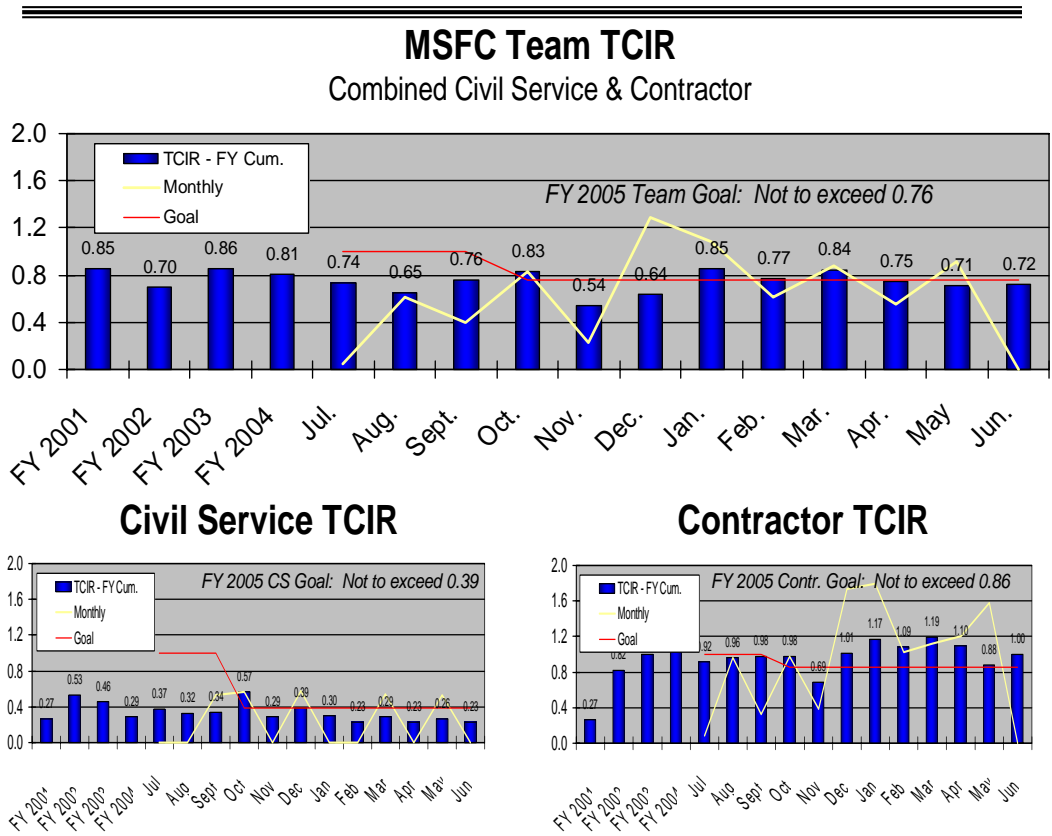
MSFC Lost Time Incident Rate (LTIR)



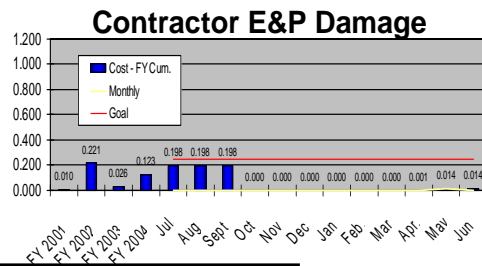
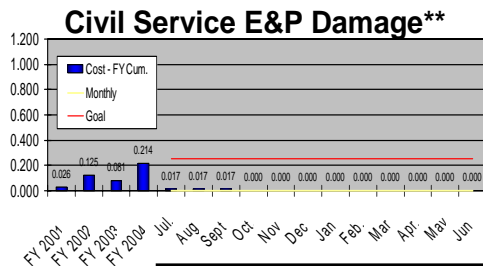
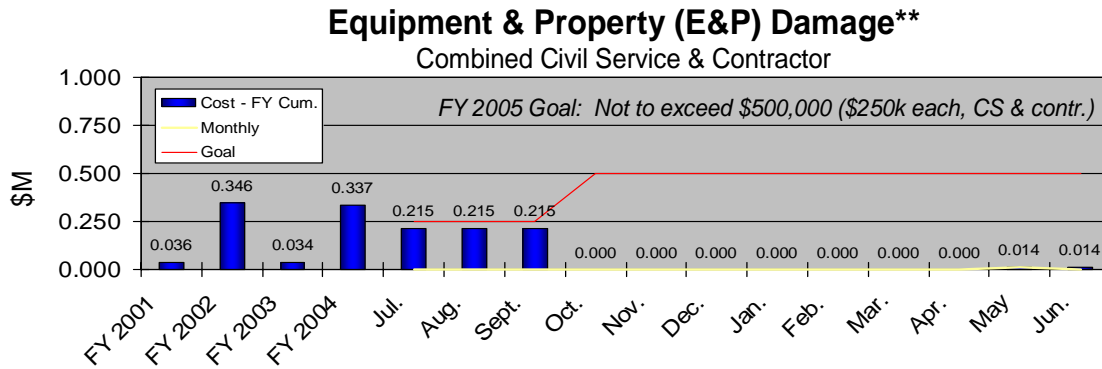
MSFC Lost Time Incident Severity Rate (LTISR)



MSFC Total Case Incident Rate (TCIR)

















MSFC Equipment & Property Damage



****Graphs do not include the following April events (awaiting final costs):**
 1) DART mishap – est > \$1M 2) Stud tensioner rebound – est \$25-250k

FY05 Summary (through June 30, 2005)

Institutional Safety Metrics

Metric	Civil Service	Contractor
Lost Time Incident Rate (LTIR) <small>Goal: <= 0.13 CS, 0.21 Contr.</small>	 LTIR = 0.0 for FY05 Trend – 0 lost time mishaps in FY05	 LTIR = 0.15 for FY05 Trend – Steady decline since Apr.
Lost Time Incident Severity Rate (LTISR) <small>Goal: <= 5.00 All</small>	 LTISR = 0.0 for FY05 Trend – 0 lost time mishaps in FY05	 LTISR = 1.16 for FY05 Trend – Steady decline since Mar.
Total Case Incident Rate (TCIR) <small>Goal: <= 0.39 CS, 0.86 Contr.</small>	 TCIR = 0.23 for FY05 Trend – Relatively constant over 8 mos.	 TCIR = 1.0 for FY05 Trend – Relatively steady
Mishaps (Type A & B)	 1 Type A (DART), & 0 Type B mishaps	 Zero Type A or B mishaps in FY05
Mishaps (Type C&D) <small>Goal accounted for in LTIR & TCIR</small>	 1 Type C & 4 Type D's in FY05	 6 Type C's & 20 Type D's in FY05
Close Calls (incl. first aid) <small>Goal accounted for in LTIR & TCIR</small>	 5 close calls reported in FY05	 22 close calls reported in FY05
Equipment & Property Damage <small>Goal: < \$250k each for CS & Contr.</small>	 2 cases reported in FY05 Trend – Two reports in FY05 (incl. DART)	 2 cases reported in FY05 Trend – Two reports in FY05

MARSHALL SPACE FLIGHT CENTER

S&MA AOA –FY06

APPENDIX B

RESOURCE SUMMARIES

Pages removed for the following reason: (b)(4)

Acronyms

ACI	Administratively Controlled Information
ALERTS	Acute Launch Emergency Reliability Tip
AOA	Annual Operating Agreement
ATP	Authority to Proceed
BST	Behavior Science Technology
CAITS	Centerwide Action Item Tracking System
CIO	Chief Information Officer
COC	Certificate of Compliance
CoFR	Certification of Flight Readiness
CRPS	Centerwide Resources Planning System
CRM	Continuous Risk Management
CSO	Computer Security Official
CWC	Collaborative Work Commitment
DCB	Document Control Board
DCMA	Defense Contract Management Agency
DCMC	Defense Contract Management Command
DRD	Detailed Requirements Document
ECLSS	Environmental Control and Life Support System
ECP	Engineering Change Proposal
EMS	Environmental Management System
ESMD	Exploration System Mission Directorate
ET	External Tank
FAA	Federal Aviation Administration
FCA	Functional Configuration Audit
FMEA/CIL	Failure Modes and Effects Analysis/Critical Items List
FPPS	Federal Payroll Personnel System
G&A	General and Administrative
GIDEP	Government Industry Data Exchange Program
GMIP	Government Management Inspection Point
HA	Hazard Analysis
HR	Human Resources
HQ	Headquarters
IA	Independent Assessment
IDP	Individual Development Plan
IHOPs	Inventory of Hazardous Operations
IMTE	Inspection, Measuring and Test Equipment
ISO	International Organization of Standardization
ISS SORR	International Space Station Stage Operations Readiness Review
iTA	Independent Technical Authority
IT	Information Technology Security
JHA	Job Hazard Analysis
JSC	Johnson Space Center
MAF	Michoud Assembly Facility
MRB	Material Review Board

MIP	Mandatory Inspection Points
MPLM	Multi-Purpose Logistics Module
MSFC	Marshall Space Flight Center
MSRR	Materials Science Research Rack
NASA	National Aeronautics and Space Administration
NCR	Nonconformance Report
NPD	NASA Policy Directive
NQA	National Quality Audit
NSRS	NASA Safety Reporting Systems
NSTC	NASA Safety Training Center
OCE	Office of Chief Engineer
OExS	Office of Exploration Systems
OGS	Oxygen Generation System
OSHA	Occupational Safety and Health Administration
OSMA	Office of Safety and Mission Assurance
PCA	Program Commitment Agreement
PDR	Preliminary Design Review
PDRM	Professional Development Roadmaps
PEP	Performance Evaluation Profile
PMC	Program Management Council
POC	Point of Contact
PRA	Probabilistic Risk Assessment
PRACA	Problem Report and Corrective Action
PRCB	Program Requirement Control Board
PV	Process Verification
QA	Quality Assurance
R&M	Reliability and Maintainability
RID	Review Item Discrepancy
RMO	Resident Management Office
RSRM	Reusable Solid Rocket Motor
RTF	Return to Flight
S&MA	Safety and Mission Assurance
SCDP	Safety Compliance Data Package
SHE	Safety, Health, & Environmental
SMARR	Safety and Mission Assurance Readiness Review
SR&QA	Safety Reliability and Quality Assurance
SRB	Solid Rocket Booster
SSME	Space Shuttle Main Engine
SSPPO	Space Systems Program/Projects Office
SSWP	Supervisor Safety Web Page
SOW	Statement of Work
STD	Space Transportation Directorate
STPPO	Space Transportation Program/Projects Office
STS	Space Transportation Systems
VPP	Voluntary Protection Program
VSE	Vision of Space Exploration